

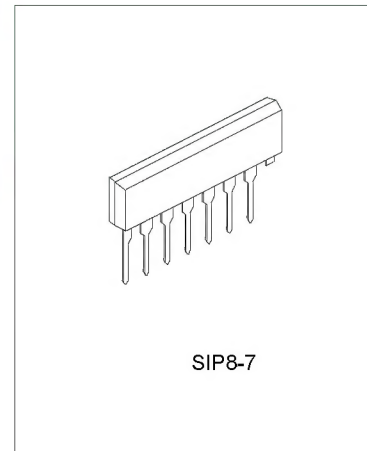
MIC AMP IC

DESCRIPTION

SA2011 is suitable for audio MIC amplifier of portable cassette tape recorder and karaoke.

FEATURES

- * Built in ALC DET Circuit.
- * Built in NFB resistance. (Voltage gain is fixed)
 $G_v = 47\text{dB}$ (Typ.) : $f = 1\text{kHz}$, ALC OFF
- * ALC Level: $V_{out}(ALC) = 0.6V_{rms}$ (Typ.)
- * ALC Range: $R_{ALC} = 58\text{dB}$ (Typ.)
- * Operating Supply Voltage Range: $V_{CC} = 4V \sim 14V$



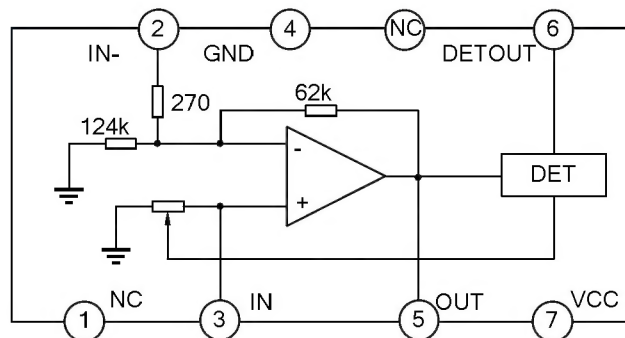
APPLICATIONS

- * Cassette tape recorder, karaoke, etc...

ORDERING INFORMATION

Device	Package
SA2011	SIP8-7

BLOCK DIAGRAM



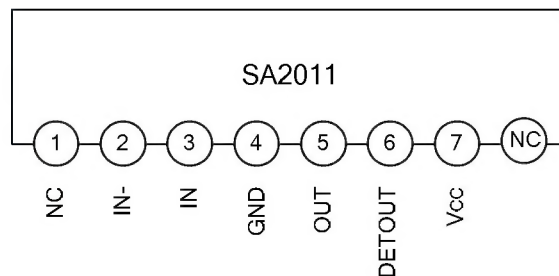
ABSOLUTE MAXIMUM RATING (T_{amb}=25°C)

Characteristics	Symbol	Rating	Unit
Maximum Supply Voltage	V _{CC} max	14	V
Allowable Power Dissipation	P _d max	900	mW
Operating Temperature	T _{opr}	-25 ~ +75	°C
Storage Temperature	T _{stg}	-55 ~ +150	°C

ELECTIVAL DHARACTERISTICS ($V_{CC}=7V$, $f_r=1kHz$, $R_L=10k\Omega$, $T_{amb}=25^\circ C$)

Characteristics	Symbol	Test condition	Min.	Typ.	Max.	Unit
Quiescent Current	ICCQ	$V_{IN}=0$, ALC ON	--	5.0	8.0	mA
Voltage Gain	G_v	--	45.5	47	48.5	dB
Maximum Output Voltage	V_{om}	THD = 1%	1.0	1.3	--	Vrms
Total Harmonic Distortion	THD	$V_{OUT}=0.3V_{rms}$ $BW=400Hz\sim 30kHz$	--	0.2	0.5	%
ALC Level	$V_{out}(ALC)$	$V_{IN}=0.0178V_{rms}(-35dBV)$	0.7	0.8	0.9	Vrms
ALC Range	RALC	3dB up	40	58	--	dB
Attack Time	TATK	$V_{IN}=1.41mV_{rms}(-57.0dBV)$ $\rightarrow 0.014V_{rms}(-37.0dBV)$	--	0.05	--	s
Recovery Time	TRCV	$V_{IN}=0.014V_{rms}(-37.0dBV)$ $\rightarrow 0.447mV_{rms}(-67.0dBV)$	--	2	--	s
Ripple Rejection Ratio	R.R.	$f=100Hz$, $V_{ripple}=0.1V_{rms}$	-30	-46	--	dB
Input Resistance	R_{IN}		--	20	--	$k\Omega$
Equivalent Input Noise Voltage	V_{ni}	$BW=20Hz\sim 20kHz$ $G_v=47dB$, $R_g=2.2k\Omega$	--	1.4	3.0	μV

PIN CONFIGURATION



Note: When the seal is looked in positive direction, the left pin on the bottom is the first pin (Pin 1).

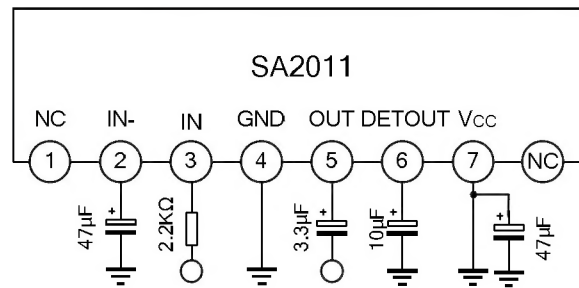
PIN DESCRIPTIONS

Pin no.	Pin name	Description
1	NC	No connection.
2	IN-	Feedback port.
3	IN	Positive input of AMP.
4	GND	Ground.
5	OUT	Output of AMP.
6	DETOUT	Output of ALC DET, connected to a $10\mu F$ capacitance .
7	VCC	VCC.

FUNCTION DESCRIPTION

1. This IC built-in ALC detect circuit. When input large signal, the ALC become high level, and control the output amplitude; when input small signal, the ALC is shut down, output gain is fixed.
2. Voltage gain of amplifier is determined by the built-in negative feedback resistance.

TEST CIRCUIT



PACKAGE OUTLINE

SIP8-7

Unit: mm

